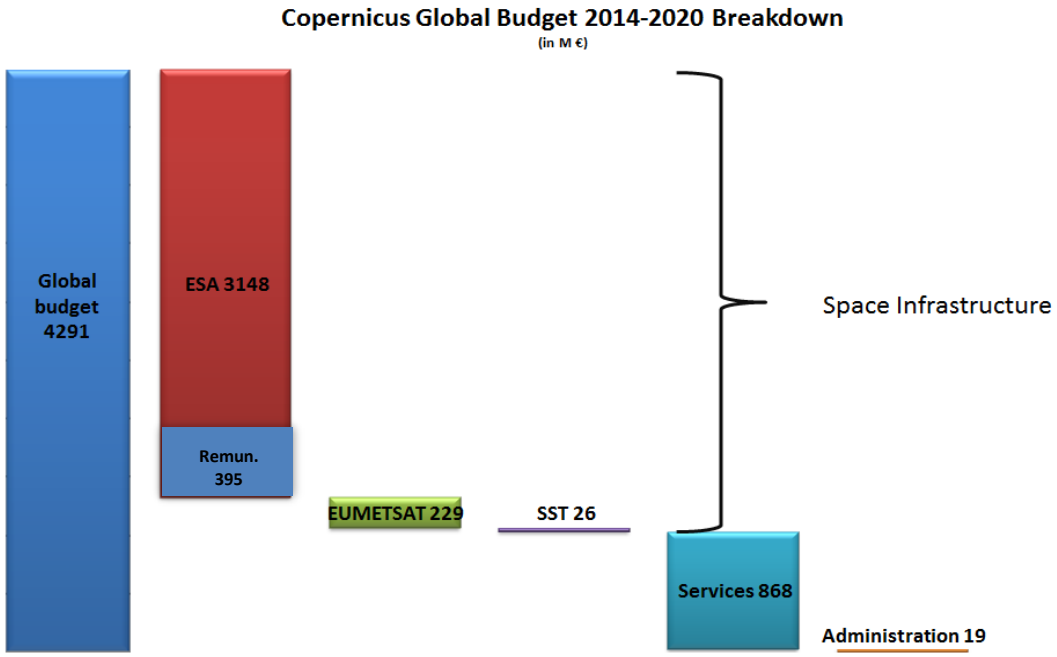
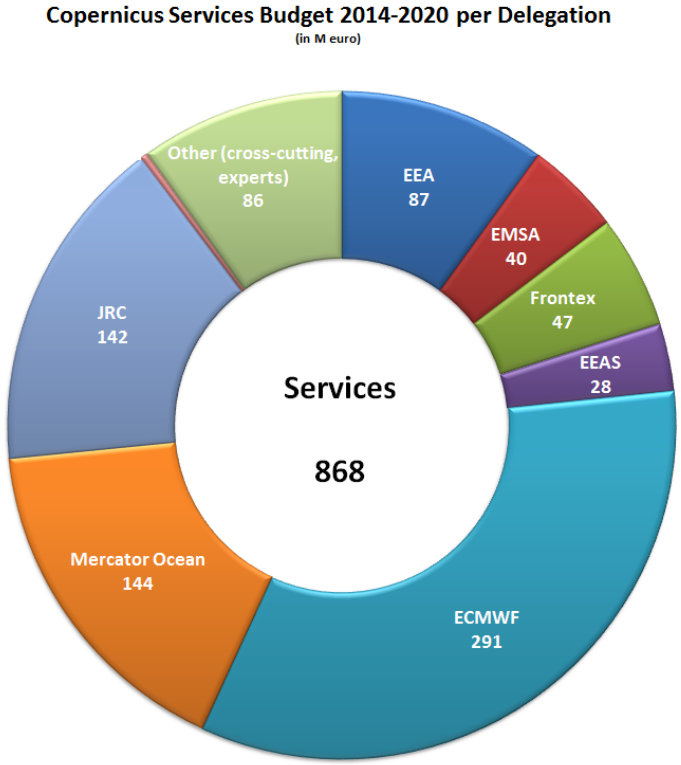
Feedback dal Copernicus Committee meeting del 1/7/2016:

Work Programme 2017 e Collaborative Esteso nell'Integrated Ground Segment

User Forum Nazionale Copernicus
14 luglio 2016

Copernicus budget





Commitment appropriations 2014-2020: 2017

(in EUR thousands)	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**
MFF operational budget	360 432	553 970	583 567	609 832	642 661	873 970	647 847	**4 272 279**
MFF admin budget	2 500	2 500	2 600	2 800	2 900	2 900	3 000	**19 200**
Total Copernicus	**362 932**	**556 470**	**586 167**	**612 632**	**645 561**	**876 870**	**650 847**	**4 291 479**

- Impegni di bilancio dell'UE per le attività future, prevedendo in tal modo i pagamenti futuri
- Dopo l'adozione del quadro finanziario pluriennale (QFP) 2014-2020 la flessibilità è limitata nel livello degli impegni annuali

WP 2017

4 key stages

Stage 1 (2wks plus 19 April -26 April)
Presentation of Entrusted Entity Plans to UF

Stage 2 (2 wks plus 27 May – 8 June)
Presentation of WP 2017 draft 1 to UF

Stage 3 (2 wks plus 1 July – 13 July)
Presentation of WP 2017 draft 2 to CC

Stage 4 (August – September)
Commission Interservice Consultation

Draft calendar for WP & preparation in UF and CC

User Forum # 8		8 February
	Copernicus Committee	1 March
User Forum #9 **Plans 2017 presented by Entrusted Entities**		19 April Comments to COM latest 26 April, to allow COM to prepare draft & send to UF & CC
User Forum #10 **Presentation and discussion of draft WP 2017 (sent to UF & CC)**		27 May Comments to COM latest 8 June, to allow COM to prepare draft & send to UF & CC
	Copernicus Committee Presentation and discussion of updated draft WP 2017 (sent to UF & CC)	1 July **Comments to COM latest 13 July, to allow COM to launch Interservice consultation before summer break**
User Forum #11		6 September
	Copernicus Committee	6 October
User Forum #12		23 November
	Copernicus Committee	2 December

Adoption process Commission and Committee by November

2. INDICATIVE BREAKDOWN OF 2017 BUDGET

Copernicus Budget 2017	(EUR)
Activities under Budget Line 02 06 01	**123 306 522**
1. Indirect Management:	**92 509 000**
Land Monitoring Service (Pan-European and Local)	8 648 000
Marine Environment Monitoring Service	20 385 000
Atmosphere Monitoring Service	9 570 000
Climate Change Service	33 945 000
Security Service (Maritime Surveillance)	6 500 000
Security Service (Border Surveillance)	8 040 000
Security Service (Support to External Actions)	4 500 000
In-situ coordination	921 000
2. Direct Management:	**30 797 522**
Land Monitoring Service (Global)	9 500 000
Emergency Management Service	8 900 000
LUCAS in-situ Network and Cal-val activities	3 265 750
Programme Evaluation	761 772
User Uptake, Digital Market and Downstream Services	6 670 000
Internationalisation of Copernicus	700 000
Communication and Outreach	1 000 000
Activities under Budget Line 02 06 02	**486 525 478**
1. Indirect Management:	**481 925 478**
Space Segment Development	160 332 478
Sentinel Launches	6 447 000
Sentinel Operations (S1-2-3)	139 430 000
Sentinel Operations (S3-J3)	20 649 196
Ground segment data circulation, dissemination & network	11 550 000
Platform evolution of Copernicus data distribution	10 000 000
Access to data from Copernicus Contributing missions	54 999 049
Remuneration and Internal Cost (ESA)	61 200 000
Remuneration and Internal Cost (EUMETSAT)	17 317 755
2. Direct Management:	**4 600 000**
Space Component Evolution	500 000
Space Surveillance and Tracking (SST)	4 100 000
Grand Total	**609 832 000**

Integrazioni richieste e recepite

- LAND: The coastal zone monitoring service will be shared among the marine and land services. In coordination with the Marine Environment Monitoring Service, the Land monitoring service will focus on the land side of the coastline, delivering a set of satellite derived parameters such as geomorphology and tailored land cover / land use mapping. Existing national databases will also be used in this context as much as possible.
- The increased resolution of phenological data will allow for a much more detailed assessment of vegetation responses to disturbances, e.g. **droughts**, storms, insect infestations, or human influence. It will be possible to monitor effects on plant functional types, **like agricultural fields** or forest stands. High resolution phenological information will contribute to the improvement of the quality of existing HRL Copernicus products relating to grasslands and wetness and may give additional input to e.g. the characterization of riparian areas. Productivity metrics linked to the growing season will strongly support mapping and assessing land degradation. Phenology data will also be useful for improved estimation of the carbon uptake and as a planning tool for climate mitigation and adaptation measures through indicators such as changes in the start, the end or the length of the vegetation growing season.

- CLIMATE: eveloping and populating the observational component of the CDS catalogue. This component includes the production of earth-observation based ECVs, which will build upon the expertise acquired by the European community within the ESA Climate Change Initiative (CCI) and other activities. While being pre-operational stricto sensu, C3S will already host routine production of these ECVs during 2017.
- An estimated budget of EUR 14.5 million is foreseen for the CDS related activities. This tentative budget will be split in the following way: Observation collection and processing and observational gridded products (8 meuros), Global reanalysis (1 meuros), Regional reanalysis (1.3 meuros), Seasonal forecasts (1.7 meuros), Climate projections (2.5 meuros).

Reference data provision for cal/val activities
2017

This activity is aiming at provision of reference in-situ data for calibration and validation of satellite data. A special emphasis will be given in 2017 to the newly operational Sentinel-3.

BUDGET

ACTIVITY	INSTRUMENT	TIME FRAME	BUDGET (EUR)
Cal-val data provision	Specific contract in existing Framework 2016 contract at JRC	2017	395 000

Attività di Downstream

Supply-side (1/2)

★ **Copernicus Start-up Programme**

- Coaching scheme signed and started
- Prizes: call open Q4 2016
- AppCamps: 2017
- Incubation: 2017

★ **Predictability**

- Ongoing discussion on the delineation of the boundary between core & downstream
- Space strategy to send strong message on continuation of the programme

Supply-side (2/2)

- **H2020**
  - Discussion to improve synergies with Copernicus (e.g. big data, downstream applications…)

- **Supply of skills**
  - Cooperation with EIT-KIC: Q4 2016
  - COSME call for skills for EO: Q1 2017 (800k€)
  - Blueprint for Sectorial Cooperation on Skills: Erasmus+ call for a space/EO platforms (4 Mn€)

- **Cluster internationalisation**
  - 2 COSME calls dedicated to EO: Q4 2016 (400k€)

SPACE DATA FOR SOCIETAL CHALLENGES AND GROWTH

Section 2 – User uptake, digital market and downstream services

1: Copernicus Services

- ★ **4.2.1. ACTION 1: Supporting the Copernicus users and Market Uptake through the Knowledge Innovation Centres (KICs) of the European Institute of Innovation and Technology (EIT)**
- ★ **4.2.2. ACTION 2: Uptake of Copernicus by different industry (non- EO) sectors**
- ★ **4.2.3. ACTION 3: The Copernicus initiative for start-ups**
- ★ **4.2.4. ACTION 4: Network of Copernicus relays and creation of a Copernicus User Uptake Support Office**
- ★ **4.2.5. ACTION 5: Copernicus Academy**
- ★ **4.2.6. ACTION 6: Activities under the Copernicus Framework Partnership Agreement (FPA)**

TF-2016-05

Copernicus –Roadmap for an Integrated Ground Segment

(Revision 3, as of 30 May. 2016)

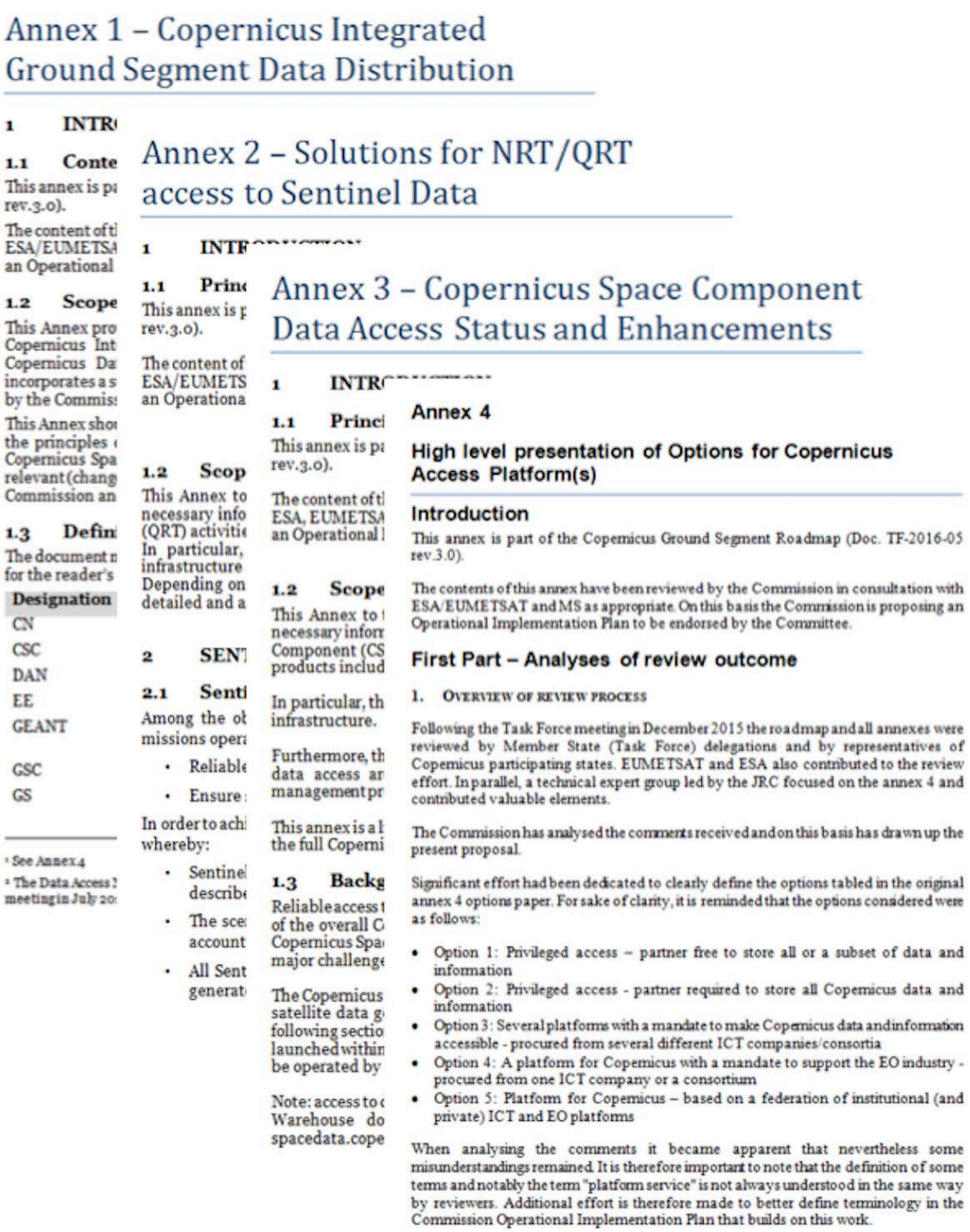
I. Background, context and objectives

1. At its meeting on 27.03.2015, the Copernicus Committee agreed to establish a Task Force on the Copernicus Ground Segment and Big Data Governance as a subgroup of Copernicus Committee. The Task Force's terms of reference (Doc. CC-2015-23) stipulate that the Task Force will provide strategic guidance regarding all activities pertaining to the evolution of the Copernicus Ground Segment (GS), including the Copernicus Space Component Core Ground Segment (CSC Core GS) and the Collaborative Ground Segment (CollGS). To this end, the Task Force should in particular provide before the end of 2015[1] recommendations in the form of a roadmap on implementation measures for setting-up a coherent, performant and cost-effective Copernicus Integrated Ground Segment, which will rely in the post-2017/2018 period on a sustained CSC Core GS and on complementary National Collaborative GS initiatives, coordinated at an extent to be discussed.
2. In order to comply with the Copernicus Regulation and the Copernicus data policy, the evolution of the Ground Segment needs to ensure that the requirements as defined in the technical baseline documentation identified in the EU-ESA and EU-EUMETSAT Copernicus Agreements are met, in particular with regard to the equitable and reliable access to data, the quality, timeliness, transparency and non-duplication of data and products, the support to users, the respect of key-performance indicators and reporting requirements for ground segment enhancements financed by Copernicus.
3. The activities of the Collaborative Ground Segment undertaken by ESA Member States, considered in the framework of this roadmap currently encompass the NRT/QRT activities and the data mirroring. As a principle, they can contribute to enhancing the performance and resilience of the Copernicus data dissemination arrangements, but they should not jeopardize activities of the CSC Core Ground Segment, e.g. by duplicating the production of core products. The "incubator function" of national initiatives to develop new products and/or algorithms will be considered in the perspective of the possible evolution of the Core Ground Segment.

[1] Subsequently it was agreed to extend the work of the Task Force into 2016.

Documento chiave che esprime le raccomandazioni su questioni che dovrebbero essere a carico dell'IGS all'interno di una determinata linea temporale con due maggiori obiettivi:

- La diffusione dei dati Sentinel dovrebbe essere rafforzato nel breve termine **utilizzando le infrastrutture esistenti**
- Con l'orizzonte 2017/18, l'IGS deve garantire l'accesso ai dati e alle informazioni attraverso il paradigma dei Big data



Annex 1 – Copernicus Integrated Ground Segment Data Distribution

Annex 2 – Solutions for NRT/QRT access to Sentinel Data

Annex 3 – Copernicus Space Component Data Access Status and Enhancements

Annex 4

High level presentation of Options for Copernicus Access Platform(s)

Introduction

This annex is part of the Copernicus Ground Segment Roadmap (Doc. TF-2016-05 rev.3.0).

The contents of this annex have been reviewed by the Commission in consultation with ESA/EUMETSAT and MS as appropriate. On this basis the Commission is proposing an Operational Implementation Plan to be endorsed by the Committee.

First Part – Analyses of review outcome

1. Overview of review process

Following the Task Force meeting in December 2015 the roadmap and all annexes were reviewed by Member State (Task Force) delegations and by representatives of Copernicus participating states. EUMETSAT and ESA also contributed to the review effort. In parallel, a technical expert group led by the JRC focused on the annex 4 and contributed valuable elements.

The Commission has analysed the comments received and on this basis has drawn up the present proposal.

Significant effort had been dedicated to clearly define the options tabled in the original annex 4 options paper. For sake of clarity, it is reminded that the options considered were as follows:

- Option 1: Privileged access – partner free to store all or a subset of data and information
- Option 2: Privileged access - partner required to store all Copernicus data and information
- Option 3: Several platforms with a mandate to make Copernicus data and information accessible - procured from several different ICT companies/consortia
- Option 4: A platform for Copernicus with a mandate to support the EO industry - procured from one ICT company or a consortium
- Option 5: Platform for Copernicus – based on a federation of institutional (and private) ICT and EO platforms

When analysing the comments it became apparent that nevertheless some misunderstandings remained. It is therefore important to note that the definition of some terms and notably the term "platform service" is not always understood in the same way by reviewers. Additional effort is therefore made to better define terminology in the Commission Operational Implementation Plan that builds on this work.

Annex 1 – Copernicus Integrated Ground Segment Data Distribution
Annex 2 – Solution for NRT/QRT access to Sentinel Data
Annex 3 – Copernicus Space Component Data Access and Enhancement
Annex 4 – High level presentation of options for Copernicus Access Platform(s)

EUROPEAN COMMISSION
Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs

Space Policy, Copernicus and Defence
Space Data for Societal Challenges and Growth

Operational Implementation Plan

Proposed approach to implement the roadmap and annexes of the Integrated Ground Segment and Big Data Governance Task Force

Commission européenne/Europese Commissie, 1049 Bruxelles/Brussel, BELGIQUE/BELGIË - Tel. +32 22991111
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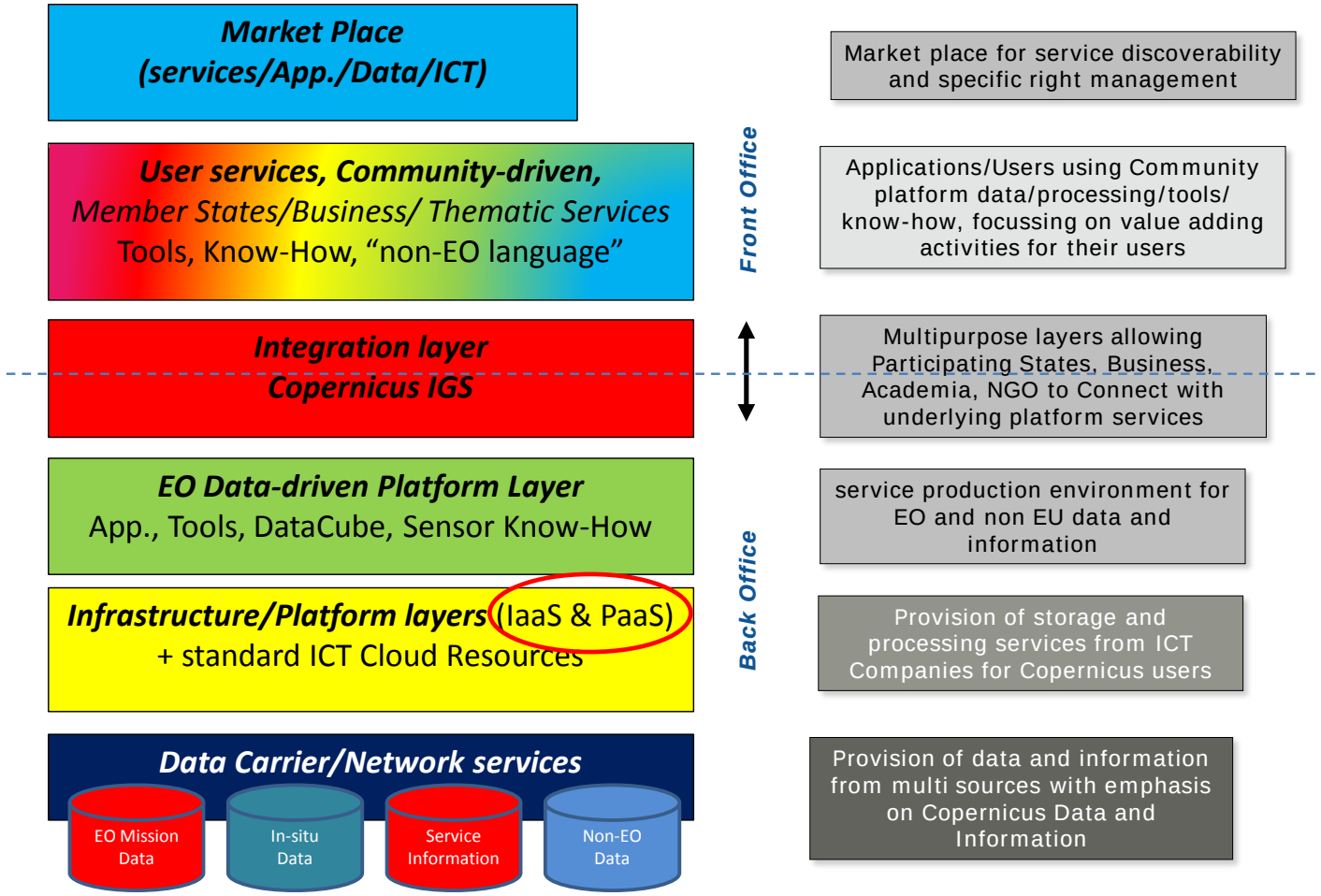
Il Piano di Attuazione Operativo propone un approccio per l'Integrated Ground Segment attraverso due maggiori punti:

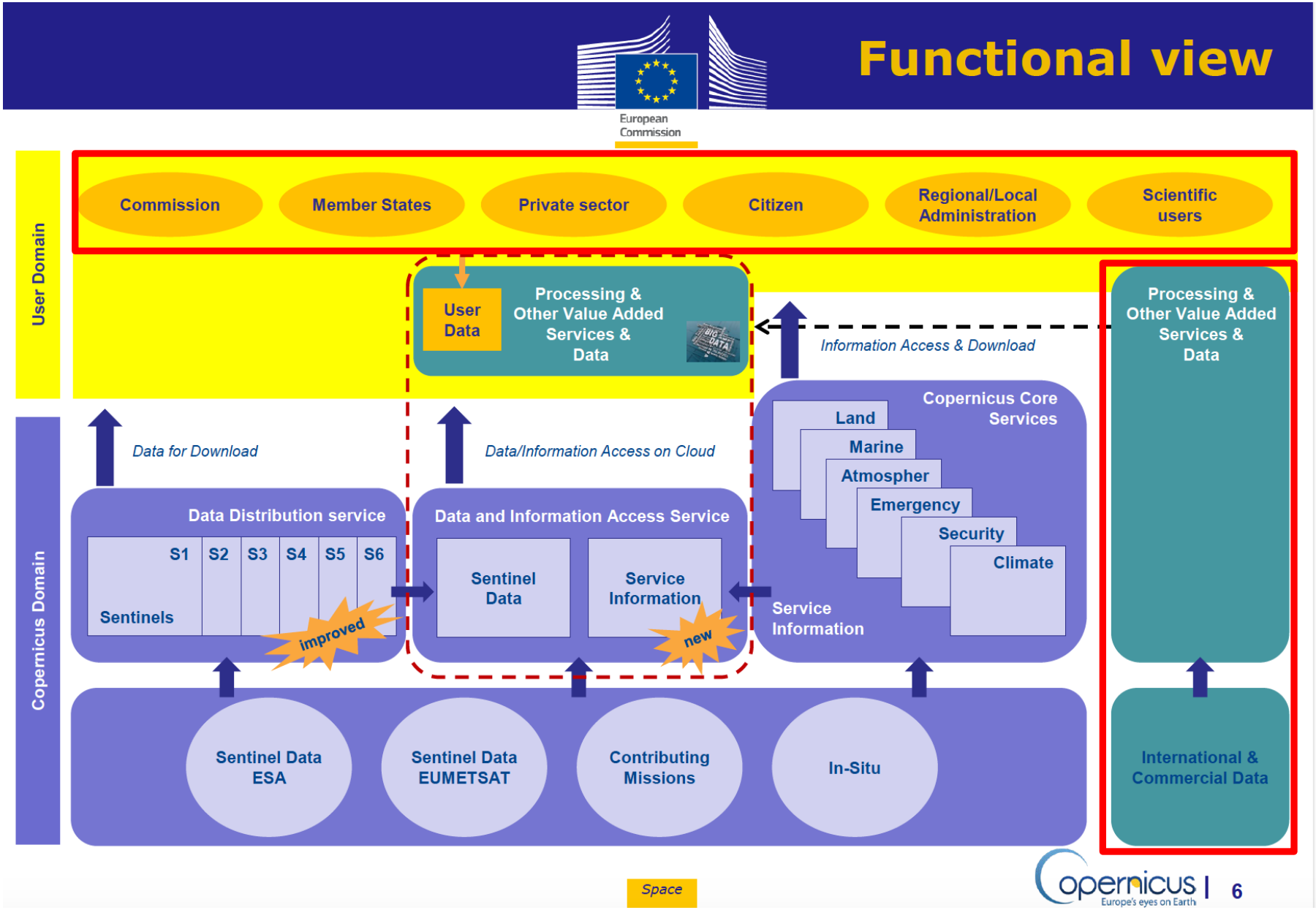
- Prevede il rafforzamento delle capacità di distribuzione e una rivalutazione delle **infrastrutture nazionali già costruite.**
- Sviluppa il concetto di dati Copernicus e dei servizi di accesso alle informazioni in cui sono collocati i dati, le informazioni e le elaborazioni, **permettendo il loro uso attraverso lo sviluppo di prodotti a valore aggiunto** attraverso attori, pubblici o privati - ad esempio, il valore degli Stati membri è **l'aggiunta di attività anche istituzionali per servire i propri utenti**

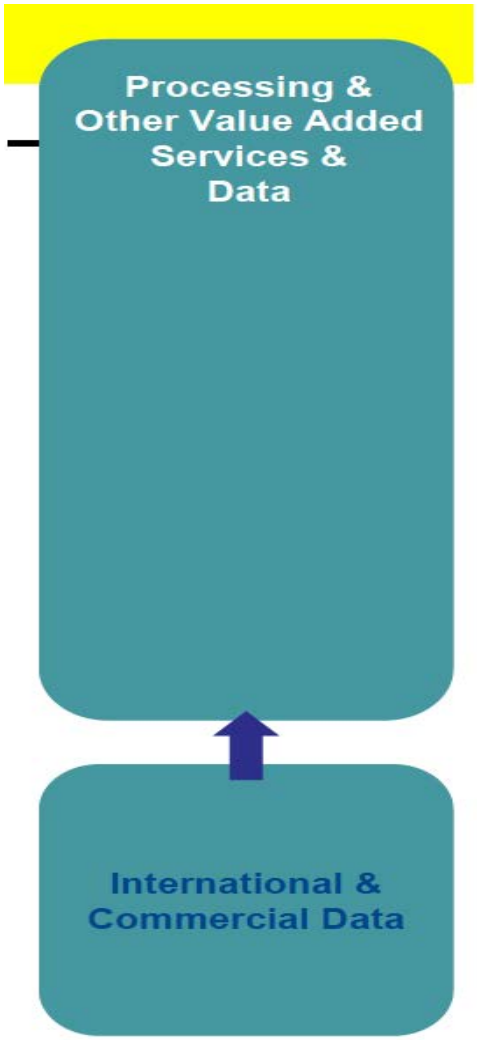
Il futuro Integrated Ground Segment proposto dalla Commissione



L'architettura fisica cui si fa riferimento è a livelli, e vede una separazione tra back office (il livello più interno in cui si gestisce il dato – in prospettiva con tecniche ICT big data - e se ne effettua l'elaborazione primaria e front office, il luogo dei downstream services.

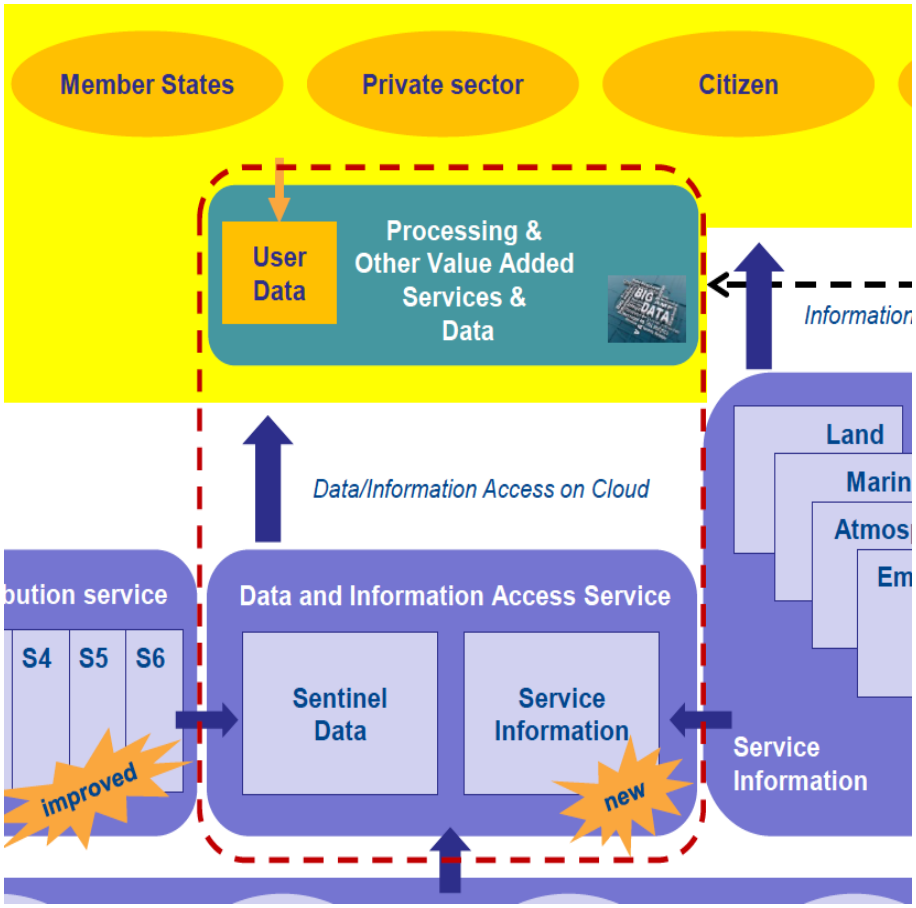
Schema funzionale dell'IGS





Il Collaborative esteso italiano allo stato attuale è quello che nello schema funzionale presentato dalla Commissione è indicato come “Processing and other value added services and data”.

Considerando l’attuale impostazione, esso ha una dimensione nazionale e nasce parallelo e indipendente rispetto all’attuale e al futuro IGS e con una connotazione istituzionale: ha un proprio accesso ai dati delle Sentinel attraverso gli archivi mirror e le antenne NRT/QRT, aggrega gli archivi nazionali in situ, **sviluppa i propri analytics**, si dota di una propria piattaforma big data, si propone agli utilizzatori commerciali **incentivandoli anche con i fondi del Mirror Copernicus Space Economy**.



I progetti Mirror Space Economy portano ad una integrazione dell'Collaborative Esteso nell'IGS, sfruttandone in parte le potenzialità e i servizi offerti ma mantenendo un'infrastruttura Big Data ed un coordinamento nazionale a livello di servizi istituzionali (quelli commerciali devono necessariamente porsi al top della catena del valore).
In questo modo, l'Italia come stato Membro può avvalersi sia di fondi nazionali che di fondi CE per sviluppare e mantenere il collaborative nella parte che promuoverà lo sviluppo del front office.

Quanto al back office, considerato che la Commissione nel realizzarlo e finanziarlo passa per le entrusted entities, va tenuto presente nel WP2017 l' **ACTION 6: Activities under the Copernicus Framework Partnership Agreement (FPA)**

ACTION 6: The objective of the Partnership agreement is to give impetus to the functioning of the programme and uptake in general via direct support to activities in member States

In accordance with the Copernicus Framework Partnership Agreement (as soon as it is established and the consortium is formed) the Commission will fund activities such as:

- thematic activities (either national or cross-border);
- international and innovative means activities;
- general outreach activities.

Prior to signature of specific agreements, invitations for submission and evaluations shall be organised in accordance with the Framework Partnership Agreement.

H2020 Space call results

Earth Observation topics 2016 call

Call	Topic	Indicative Budget WP 2016 [MEUR] (spring update)	Number of proposals evaluated	Number of proposals selected for funding
H2020-EO-2016		**23.23**	**60**	**11**
EO-1-2015	*Downstream applications*	9.85	28	5
EO-2-2015	*Downstream services for public authorities*	4.38	2	1
EO-3-2015	*Evolution of Copernicus services*	9.00	30	5

Topic	EO-1-2016: **Bringing EO applications to the market**	IA

Project acronym	Project title/keywords	EU contrib.
CyanoLakes	The Cyanobacteria Blooms Public Information Service *cyanobacteria; water quality; eutrophication; information services*	1.040.484,13 €
DIANA	Detection and Integrated Assessment of Non-authorised water Abstractions using EO *non-authorized water abstraction, Irrigation, water management, commercial service platform,*	1.937.890,63 €
EOMORES	Earth Observation based services for Monitoring and Reporting of Ecological Status *water quality, WFD reporting and monitoring, ecological indicators, ecological forecasting*	2.005.861,66 €
EUGENIUS	European Group of Enterprises for a Network of Information Using Space *EO commercial service platforms; Service providers network, Regions, Land and natural resources management*	1.762.139,88 €
SPACE-O	Space Assisted Water Quality Forecasting Platform for Optimized Decision Making in Water Supply Services *Hydrological modelling, Water quality, Data assimilation, Water Utilities, Performance Indicators, Decision Support System*	2.002.087,50 €
	Total EU contribution for this topic:	8.748.463,80 €

Topic	EO-2-2016: **Downstream services for public authorities**	PCP

Project acronym	Project title/keywords	EU contrib.
MARINE-EO	Bridging Innovative Downstream Earth Observation and Copernicus enabled Services for Integrated maritime environment, surveillance and security *marine awareness, marine public authorities, integrated maritime surveillance and security, environment and climate change, CISE, fisheries, arctic, border surveillance and security*	4378584,38 €
	Total EU contribution for this topic:	4378584,38 €

Topic	EO-3-2016: **Evolution of Copernicus services**	RIA

Project acronym	Project title/keywords	EU contrib.
CEASELESS	Copernicus Evolution and Aplications with Sentinel Enhancements and Land Effluents for Shores and Seas **Coastal**, Sentinel, retrieval, modelling, assimilation, wind, wave, current, land discharge, performance, database, repository, erosion, flooding , renewable energy, aquaculture, harbours, routing.	1.999.332,50 €
Copernicus App	Stimulating wider uptake of Copernicus Services by making them available as linked open data *access to data for mobile developers, maps API, streaming Copernicus Services, linked open data, open source tools, Space App Camp, user validation*	1.617.917,50 €
E2mC	Evolution of Emergency Copernicus services *Crowdsourcing, Social media, Copernicus, **Emergency** Management Service, Satellite emergency mapping, Copernicus Witness, Geosocialdata, Civil Protection, Humanitarian Aid, Social Crisis Map*	1.500.000,00 €
ECoLaSS	Evolution of Copernicus Land Services based on Sentinel data *Applications; **Land** Services; Land Cover and Land Use, Monitoring; Sentinel data; Time Series*	2.000.000,00 €
SENSAGRI	Sentinels Synergy for Agriculture ***Agriculture**, crops, near real time biophysical parameters*	1.854.757,50 €
	Total EU contribution for this topic:	€ 8.972.007,50